

Remarks

Applicant's respectfully request entry of this amendment. The following are applicant's response to issues raised in the order as presented in the Office Action.

Rejection under 35 U.S.C. 103:

Claims 1-28 were rejected under 35 U.S.C. 103 as being unpatentable over Tanigawa (JP 62-147808) in view of Branchevsky (US 6,252,761) and Rosenberg (US 4,516,092).

Claims 1, 3, 6-8, 12 and 23 have been amended. Claims 5, 13-15 and 24-25 have been canceled.

Tanigawa discloses a power splitter having a binocular core. Branchevsky discloses a low temperature co-fired ceramic device. Rosenberg discloses an inductor and mounting technique.

Neither Tanigawa, Branchevsky nor Rosenberg, teach, disclose or suggest as in amended claim 1, a power splitter that has a substrate with a top layer, a bottom layer and inner layers. A resistor and terminals are formed on the top layer. Conductive pads are formed on the bottom layer. A capacitor is formed between an inner layer and a ground plane is formed on another inner layer. A binocular core transformer is attached to the top layer and connected to the terminals. The transformer provides impedance matching and dividing. Vias extend between the layers. An insulative overglaze is located over the resistor and under the transformer. The insulative

overglaze protects the resistor from contacting the transformer.

Specifically, none of the cited references, teach, disclose or suggest either alone or in combination, a substrate with an internal capacitor and a resistor having an insulative overglaze mounted on a top layer with a binocular core transformer located above a protective insulative overglaze.

None of the cited references teach the use of an insulative overglaze over the resistor on the top surface. In contrast, the device of Branchevsky in column 1 is referring to discrete mounted components that would be attached by soldering and have a high height. The present invention uses a screened on thick film resistor and insulative overglaze that is very low in height allowing other components to be mounted over it. If discrete components were used, the transformer of the present invention could not be mounted over these components

There is no suggestion in the cited references to create a device that includes mounting a binocular core transformer over an insulative overglaze covering a resistor on the top layer of multi-layered substrate. Such a combination can only be gleaned through hindsight reasoning. It has been held that one cannot use hindsight reconstruction to pick and chose among isolated disclosures in the prior art to depreciate the claimed invention. In Re Fine, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988).

Even assuming that the combination of Tanigawa, Branchevsky and Rosenberg was possible, none of the references disclose using an insulative overglaze in order to mount a transformer over a resistor as required by amended claim 1. At most, the combination of Tanigawa, Branchevsky and Rosenberg would suggest using a

separately mounted resistor that would increase the overall footprint of the power splitter and defeat one of the purposes of the present invention which is to create smaller more compact power splitters.

Dependent claims 2-4 and 6-11 depend from independent claim 1 and add additional patentable features and are allowable therewith.

With respect to claims 9-11, none of the cited references show cascaded power splitters as disclosed in the present invention.

Neither Tanigawa, Branchevsky nor Rosenberg, teach, disclose or suggest as in amended claim 12, a power splitter that provides impedance matching and dividing. The examiner states that it would be obvious for the Tanigawa reference to be modified to provide impedance matching and dividing. Amended claim 12 further requires that a binocular core transformer be attached to the top surface and that the transformer has a first leg, a second leg and a third leg. A first winding is wound around the first leg and a second winding is wound around the third leg with each of the windings having ends connected to the terminals. Vias extend through the substrate to provide an electrical connection between the terminals and the bottom surface. A resistor is formed on the top surface under the transformer and is electrically connected between the first and second output ports. A capacitor is formed within the substrate and is electrically connected by the vias between the transformer and a ground connection. An insulative overglaze is located over the resistor and under the transformer.

The Rosenberg reference specifically discloses an inductor mounted to the top

surface of a ceramic capacitor. Assuming that the combination was of Tanigawa, Branchevsky and, Rosenberg was made, if the transformer was mounted directly onto the resistor, the transformer would short out the resistor rendering it inoperable. Without the insulative overglaze, the invention would fail to work. There is no teaching or suggestion in the cited references of using an insulative overglaze over a resistor. It is well settled that the references must be taken in their entireties, including those portions which argue against obviousness. Bausch & Lomb, Inc. V. Barnes-Hind/Hydrocurve, Inc. 230 USPQ 416, 420 (Fed. Cir. 1986).

Dependent claims 16-22 depend from independent claim 12 and add additional patentable features and are allowable therewith.

With respect to claims 20-22, none of the cited references show cascaded power splitters as disclosed in the present invention.

Neither Tanigawa, Branchevsky nor Rosenberg, teach, disclose or suggest as in amended claim 23, a method of making a power splitter that includes screening a resistor and a plurality of terminals onto a top layer, screening an insulative overglaze over the resistor, attaching a transformer over the insulative overglaze and welding wires.

There is no suggestion in the cited references of a method of screening and firing an insulative overglaze to cover a resistor on the top surface under a transformer in order to protect the resistor. A rejection based upon section 103 must rest upon a factual basis, with the facts being interpreted without hindsight reconstruction of the

prior art. Such a combination can only be gleaned through hindsight reasoning. It has been held that one cannot use hindsight reconstruction to pick and chose among isolated disclosures in the prior art to supply deficiencies in the factual basis. In Re Warner, 379f 2d 1011, 154 USPQ 173 (CCPA 1967).

Even assuming that the combination of Tanigawa, Branchevsky and Rosenberg was possible, none of the references disclose the method of screening an insulative overglaze over a resistor as required by amended claim 23. Further, none of the cited references disclose the welding of wires as required by amended claim 23. The cited references either alone or in combination fail to disclose a method of making a power splitter in the claimed manner.

Dependent claims 26-28 depend from independent claim 23 and add additional patentable features and are allowable therewith.

Conclusion:

In view of the current amendments and remarks, the claims are now believed to be in condition for allowance.

Respectfully submitted,



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